The official voice of the Air Force Research Laboratory
news@afrl
Features
July 2002

Computer games can give aviators basic skills

by Deborah Mercurio, Directed Energy Directorate

KIRTLAND AIR FORCE BASE, N.M. — Playing computer games may not be detrimental to your child's well being after all. The coordination skills acquired may be the basics needed for a career in fighter aviation.

The Air Force Research Laboratory's Directed Energy Directorate at Kirtland Air Force Base, is currently funding and developing a High Energy Laser (HEL) fighter simulator, a highly sophisticated computer game, in conjunction with the Theater Aerospace Command and Control Simulation Facility (TACCSF).

The HEL Fighter is an F-16 simulator platform modified to integrate a high-energy laser weapon model into an F-16's program. Lockheed Martin, the TACCSF subcontractor performing the model development, is currently investigating the use of the HEL on the Joint Strike Fighter. The 150th New Mexico Air National Guard Wing, "the Taco Air Force," actively participates in the simulator development by providing feedback. The pilots' comments and suggestions on a variety of issues facing this new weapon system are integrated into the development.

The HEL Fighter Simulator, on an F-16 simulator platform, is located in the Theater Aerospace Command and Control Simulation Facility. An operator can simulate aiming and firing a laser against airborne targets while flying the aircraft.

One model is capable of air-to-air engagements; the other model encompasses air-to-ground target engagements. The realistic models include atmospheric transmission losses, target lethality engagement parameters and laser system limits and ranges. The simulator evaluates design parameters for an actual high-energy laser weapon system, and assists an operator to get familiar with a directed energy weapon system. The system can be used to develop tactics and a concept of operation.

"It is imperative to have a better understanding of what lasers can do for our fighter pilots," said Col Mark D. Stephen, Deputy Director of the Directed Energy Directorate. "By providing the warfighter with the best technology, we ensure the protection of the flyer and better defense for our national interests."

Recently, the colonel was provided an opportunity to get a real world fighter pilot's perspective. Rudy Martinez, strategic planner for the Directed Energy Directorate, arranged an aircrew flight physical, altitude chamber training, and egress training on the F-16 for the colonel, so that he could have an orientation flight with the "Taco Air Force."

According to Martinez, the colonel's aircraft was part of a red force, two-ship formation. They did a training ingress in the Military Operating Area at White Sands Missile Range, and engaged a blue force, four-ship for air-to-air combat. Zeroing in, Stephen's F-16 destroyed a ground target with a Laser Guided Bomb. The colonel was able to experience first hand the capability and mission workload of the aircraft and realized the training required of an Air Force fighter pilot.

Ultimately, the goal is to participate in war games to determine the utility of using a high-energy laser, an advanced weapon system, against conventional warfare weapons. The HEL fighter simulator is scheduled for completion this year to be used in Air Force war-gaming for system evaluation. **@**